is from November to mid January as compared to *Z. oenoplia* which reaches the peak of fruiting in late January to February. Both these berries were consumed less in March and April as they were only available in the form of old, dried up, fallen fruits. The picture of overall diet in summer changed totally with seeds of *Cassia tora, Achyranthes aspera* and other seeds dominating the diet. This is a lean period for peafowl as far as the availability of fruits, tender leaves and green grass is concerned.

In December, as grass was still green, its consumption was high. Grass should have been a major component of the diet in the months of August-November when it is tender. Insect and other animal remains were rarely found during all the months which points to a less availability of animal food during winter and summer.

The overall pattern of diet composition suggests that there is a close relationship between resource availability and utilization. The use of *Cassia tora* and *Achyranthes aspera* seeds facilitates the successful survival of peafowl around human habitations where these weeds abound. It also gets plenty of crops grown in the cultivated lands. Peafowl can be regarded as diet generalists as they exhibit granivory, frugivory, insectivory and herbivory. However, during the dry seasons of winter and summer in dry deciduous forest ecosystems, the peafowl should chiefly be a primary consumer as in Gir. *Zizyphus* is a keystone species in Gir not only for peafowl, but also for the wild ungulates and therefore management programmes should ensure the regeneration and sustained availability of this crucial resource. *Cassia tora* is another equally important resource for peafowl as it provides food during the lean period of early summer. *C.tora* is regarded as a weed in many Protected Areas (PA) of India, but this herb is a vital dietary item for peafowl. The ability to exploit many niches in the trophic level and inclusion of a large number of food species might have made it possible for peafowl to occupy such a large range in the country.

February 7, 1994

PRANAV TRIVEDI[1]
A.J.T. JOHNSINGH[2]
[1]*WWF-India, Ahmedabad Divisional Office, 'Sundarvan'; Ahmedabad-380 015.*
[2]*Wildlife Institute Of India, P.O. Box # 18; Dehradun-248 001.*

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14. NOTES ON PRIMARY MOULT IN THE REDNECKED PHALAROPE *PHALAROPUS LOBATUS* (LINN.)

Information about moult in the Rednecked Phalarope *Phalaropus lobatus* is scarce due to their largely oceanic distribution away from the breeding grounds (Prater *et al.* 1977, Etheridge 1980, Cramp and Simmons 1982, Gavrilov *et al.* 1983). There is even less information regarding post-juvenile moult, and published accounts regarding replacement of remiges are conflicting.

Prater *et al.* (1977) state that in first-winter birds the primaries are 'moderately worn by late winter. (Primary moult from January has been noted by Stresemann [Stresemann and Stresemann 1966] but we have no evidence of it on the few birds examined)'. They further note that in first-summer Rednecked Phalaropes 'Primaries very worn. Some attain summer plumage'. Hayman *et al.* (1986) also state 'The primaries are not replaced during the first winter and become very worn'. Since adults have a complete post-breeding moult in late autumn/winter (Prater *et al.* 1977, Cramp and Simmons 1982) this should allow the ageing of birds in spring/ early summer based on primary wear — adults having only slightly worn primaries.

Schamel and Tracy (1988), however, found that adults and 'yearlings' (first-summer birds) could not be distinguished by primary wear on the breeding grounds in western Alaska, and further noted that J.D. Reynolds had recorded no noticeable primary wear in 'yearlings' in Manitoba, Canada. Although these authors did not relate their observations to there being a complete (i.e. including remiges) post-juvenile moult, this is the obvious implication. Hilden and Vuolanto (1972) also noted first-summer birds as being indistinguishable from adults in Finland.

Juvenile Red-necked Phalaropes are easily distinguished from adults by having a dark brown mantle

'with prominent gold-buff fringes to the scapulars and tertials'. In the autumn and early winter juveniles moult many of their body feathers so that the mantle becomes largely grey, but the scapulars and tertials may be retained to the spring but the golden-buff fringes fade to pale yellow (Prater *et al.* 1977). The inner median coverts of juveniles have rich gold fringes but these quickly fade and abrade on the outer part of the feather. Of 9 juveniles in the BNHS collection obtained in autumn from Baluchistan, Kutch and Saurashtra, the inner median coverts vary from slightly worn (2 September) to the outer fringe being very worn/faded (30 October). Although the outer fringe of the inner median coverts is lost quickly the inner fringe, which is largely protected from sunlight by the overlying feathers, retains its colour much longer and allows the ageing of birds in an advanced state of moult of the upperparts.

A small number of Rednecked Phalaropes were caught in 1983/84 at Point Calimere, Tamil Nadu (10°18' N, 79°51' E) during the BNHS Avifauna Project. Notes on these birds are given below. Primary feathers are scored from 0 (old feather) to 5 (fully grown new feather), with 1,2,3 and 4 being intermediate stages of feather growth (Ginn and Melville 1983). In the case of juvenile birds 'old' feathers may be only a few months old, whereas in adults they will be about one year old. Feather tracts are recorded from left (inner) to right (outer), thus a moult score of $1^{2}0^{8}$ means that the inner two primaries were new 'pin' feathers just emerging (score 1), and the outer eight primaries were old feathers (score 0). The very small, outermost (11th) primary was ignored.

Juveniles: 19 November. $1^{2}0^{8}$, Left = Right (i.e. moult symmetrical). Old primaries slightly worn. Well advanced in body moult; lesser and median coverts 'juvenile' dark grey brown with worn pale fringes; tertials in active moult; mantle feathers grey with broad white tips and edges, and a few black feathers on upper back. One inner median covert with pale yellow edge. This bird was recaptured on 24 November, when primary moult had progressed and scores were: L. $3^{1}2^{1}0^{8}$, R. $3^{1}2^{1}1^{1}0^{7}$

19 November. $5^{5}3^{1}0^{4}$, L = R. Old primaries slightly worn.

24 November. 0^{10}. Old primaries moderately worn. One inner median covert with trace of yellow. Mottled back. A few black feathers on crown.

24 November. 0^{10}. Old primaries moderately worn. Trace of gold remaining on scapulars. Few black feathers on crown.

26 November. 0^{10}. Old primaries moderately worn. One inner median covert with yellow fringe on inner web, worn away on outer web.

28 November. $5^{3}0^{7}$, L = R. Old primaries slightly worn. One old inner median covert with pale gold fringe. Back in active moult, a few old brownish feathers with pale tips remaining. Forehead all white, active moult.

Adults: Three adults were also caught. All three had very worn primaries. Primary moult details were:

24 November. $5^{4}4^{1}0^{5}$, L = R.

24 November. L. $5^{4}4^{1}1^{1}0^{4}$, R. $5^{3}4^{1}3^{1}1^{1}0^{4}$

28 November. $5^{2}2^{1}1^{1}0^{6}$, L = R.

Three birds of indeterminate age were caught having completed their primary moult (5^{10}), one on 28 February and two on 5 April (one of these latter being the adult caught in active moult on 28 November).

From the foregoing, it is apparent that at Point Calimere at least some juvenile Rednecked Phalaropes undergo a complete moult at much the same time as adults (N.B. The second juvenile caught on 19 November was in a more advanced state of moult than the adult caught on 28 November). Ali and Ripley (1983) state that the Rednecked Phalarope is a 'Winter visitor. Common offshore... sometimes within a few miles of land but more often well out to sea at 10 to 40 or more miles from the coastline', thus it might be considered that birds caught on the coast at Point Calimere might be 'abnormal' in some way. However there is no evidence to support this suggestion, and the birds caught were in good condition (e.g. the two caught on 19 November weighed 38 and 37 g).

Much remains to be learned regarding moult in this rather elusive species.

Acknowledgements

I am grateful to the late Dr. Salim Ali and to S.A. Hussain for inviting me to join the BNHS Avifauna Project, and to Dr. R. Sugathan for his hospitality and assistance.

February 7, 1993 DAVID S. MELVILLE
World Wide Fund for Nature, Hong Kong,
GPO Box 12721, Hong Kong.

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15. DISTRACTION DISPLAY IN THE LITTLE BROWN DOVE *STREPTOPELIA SENEGALENSIS* (LINN.)

On 5 April 1993, during bird census at Rollapadu Wildlife Sanctuary, Andhra Pradesh, I came across a little brown dove *Streptopelia senegalensis* sitting on a termite mound. As I came closer, it flew to the ground nearby and ran about on the ground with flapping wings feigning injury. It flew off when I walked towards it and perched on a nearby bush seemingly fit. Again on 23 April, I came across another dove, about 200 m from the earlier seen dove, which behaved similarly. In both cases, I made a search for nests both on the ground and in surrounding shrubs, but was not successful.

Distraction display is mostly seen in ground nesting birds (see Morris 1990). Hence what could be the cause for an arboreal species to behave likewise? Could it be that the two birds had nests on the ground that I failed to locate?[1] Both distraction display and ground nesting are not reported in the little brown dove (Ali and Ripley 1983, Cramp 1985, Goodwin 1983 and Roberts 1991)

November 27, 1993 RANJIT MANAKADAN
Bombay Natural History Society,
Shaheed Bhagat Singh Road,
Bombay 400 023.

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[1] See note no. 16 — Eds.

16. GROUND NESTING IN THE LITTLE BROWN DOVE *STREPTOPELIA SENEGALENSIS* (LINN.)

There is a no record of ground nesting in the little brown dove (Ali and Ripley 1987, Cramp 1985, Goodwin 1983, Roberts 1991).

On March 27, 1993 while censusing birds in a dense plantation 30 km north of Solapur, Maharashtra, I flushed a little brown dove *Streptopelia senegalensis* from the ground. The haphazard flight of the bird at once made me suspect the presence of the nest. On further investigation, a nest with two eggs was found on the ground at the base of a 2.5 m *Acacia catechu* tree: the nest touching the stem of the tree. After I moved out of the area, the bird returned and sat on its nest. The other tree species in the plantation were *Acacia leucophloea, A. nilotica, Albizia lebbeck, Leucaena latsiliqua, Dalbergia sissoo* and *Gliricidia maculata.* Incidentally all the trees in the plantation were leafless. There could be three possible reasons for selecting this site by the species for nesting on the ground:

1. To avoid predation since the visibility was high because of defoliation. 2. To remain in the shade of the tree. 3. To avoid blowing away of the nest by wind due to openness.

February 2, 1994 SATISH KUMAR
Bombay Natural History Society,
Hornbill House, Shaheed Bagat Singh Road ,
Bombay-400 023.